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Supplement to Montana Post

MONTANA POST

PRESERVATION

Aug.-Sept. 1982

Montana State Historic Preservation Office

In this issue of Preservation

In this second anniversary issue of the Montana Post Preservation supplement, we are concentrating on a subject that we have seldom covered in our previous issues: Montana's prehistoric resources and how they are being studied and managed.

Clearly, prehistoric resources traditionally have been, and should continue to be, of central concern in all historic preservation work. Early twentieth-century archaeologists wrote one of the first pieces of federal preservation legislation, in response to the rape of sourthwestern cliff dwellings by commercial pot hunters. In Montana, identified and evaluated prehistoric sites significantly outnumber identified and evaluated *historic* properties. At least 80% of the 15,000 entries in our statewide inventory of cultural resources record prehistoric manifestations. Hence, there is a better information base on which to analyze Montana's prehistoric sites than exists yet for historic buildings. The most fundamental reason for encouraging preservation of all properties applies as directly to prehistoric sites as it does to historic: tangible reminders of the past inform and make concrete our understanding and appreciation of earlier people in ways that cannot be duplicated in books and written materials.

But prehistoric sites are different in some important ways from historic properties. Our difficulty in organizing discussions about both buildings and prehistoric sites is real. Most important, the significance possessed by most prehistoric sites is different from that reflected in buildings and historic period properties. Buildings and many recent historical sites are primarily significant either for their appearance (architectural and engineering design) or for the associations that they possess with important historical events, people and patterns. Although much of the value of these resources can be found in visible remains, most of us cannot easily see what makes an archaeological site significant. Prehistoric sites derive their primary significance from the *information* they provide us about prehistoric people, information that is captured in the range of artifacts and features existing at a site and in their precise arrangement and quanti-

(Continued on next page)

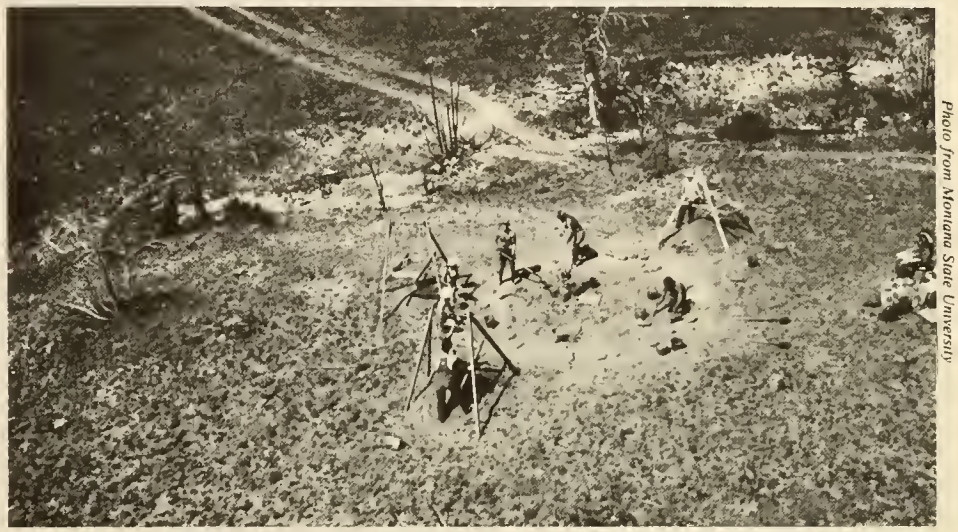

Photo from Montana State University

A Montana State University team excavates a tipi ring site in the Elkhorn Mountain foothills south of Helena.

Tipi rings = Montana prehistory

Tipi rings are Montana's most common and visible prehistoric sites. They can be found on almost any flat terrace above our streams and rivers. Their sheer numbers, and a lack of interest on the part of archaeologists, led professionals and the lay public to assume that they were distinctive, but insignificant. They remain an enigma and were often ignored and destroyed during ground-disturbing work in the state. Within the last five years, detailed analysis of tipi rings tells us that they do yield information important to our understanding of their use, and underscores how much more we should learn about them if we are to appreciate Montana's prehistoric past.

None, or at least very little of this information, would have come to light if the tipi rings in our state or chipped stone tools nearby had been disturbed from their contexts. The archaeologist works like a detective investigating a crime. The first thing every sleuth learns is "do not disturb the crime scene." The detective must reconstruct the events leading to the crime from the physical remains at the scene. If something is moved he could be easily misled. The archaeologist is in a similar situation. He or she, too, can be misled—especially when the period of time between the events leading to the deposition of the archaeological materials and the excavation of the site can be several thousand years!

In 1980, Sara Scott, a State Historic Preservation Office archaeologist, now in the Anthropology doctoral program at the University of Oregon, undertook a study of ring features that had been discovered and test-excavated in the course of the Kansas-Nebraska pipeline project in North-Central Montana. She analyzed the features from 86 sites. The types of artifacts found at these sites suggest that the prehistoric residents were engaging in short-term domestic or residential activities such as preparing hides for clothing and tipis, preparing food, and repairing hunting implements. The results of Scott's analysis were published in *Archaeology in Montana,* Volume 21, Number 2, 1980, entitled "Stone Rings: An Analysis of Selected Assemblages from the Northern Montana Plains."

Another study was sponsored by the Montana Army National Guard, Department of Military Affairs, Helena. Leslie B. Davis, Ph.D., of Montana State University studied the Pilgrim site, an open-air prehistoric campsite in the eastern foothills of the Elkhorn Mountains south of Helena. He excavated stone rings and found artifacts that demonstrated repeated occupations from possibly 30,000 years ago until the coming of historic settlers. The prehistoric hunters

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sought bison, antelope, and deer, but the presence of abundant quantities of wild edible and usable plant species within the site boundaries (particularly bitterroot and wild parsley), suggested to Davis that wild plant gathering in late spring/early summer was the primary attraction for prehistoric Pilgrim residents. Shelter from the occasionally uncomfortable weather, nearby water, and raw materials for the distinctive prehistoric chipped stone tools were also reasons this site was favored. One of the most necessary items, of course, was the availability of properly sized stones necessary to hold tipis in place.

These two studies approached the questions about stone rings from very different directions. Scott addressed the problem using survey and testing data collected by Larry Lahren, Ph.D., an archaeologist with Anthro Research Inc., of Livingston. This information reflected an archaeological investigation that included information on a small number of rings from a large number of sites. Davis' study, on the other hand, provided an entirely different perspective—he used data from the carefully controlled excavation of a large number of rings at a single site.

But, however their approaches differed, both Davis and Scott were able to analyze successfully their materials because the archaeological sites they used had not been disturbed since the time of deposition. All archaeological excavation is destructive—destructive of a finite resource, the archaeological record. But while archaeologists themselves have destroyed thousands of sites in the course of their research, far more damage has resulted from looting, treasure hunting, and modern agricultural and industrial activity. At least 25% of the archaeological sites in Arkansas, for instance, have been destroyed by agriculture and other changes in land use, as well as looters, who have been most active in the last ten years.

Given the complicated nature of archaeological analysis, reconsider the effects of looting or loss of site integrity for archaeological sleuths. Davis, for instance, used techniques borrowed from physicists and chemists to assign a date to his charcoal; soil scientists revealed the presence of a distinctive soil horizon that allowed him to estimate the age of more than a dozen stone rings for which no other physical indication of age or occupation was available; and he again drew from the fields of chemistry and physics to use the new technique of "induced X-ray emission analysis" on the obsidian artifacts found at the site. This last technique of analysis enabled him to identify the sources of obsidian, thus establishing points of contact with other people in Montana and Idaho. By using these advanced techniques, with materials that had survived largely undisturbed, Davis was able to classify thirty-four of the thiry-nine excavated rings into a chronological framework. Finally, he was also able to identify a cluster of rings as the occupation site of a single group comprising five lodges.

Tipi rings do not need to remain an interesting, but unsolved, puzzle on the Montana landscape. Professional, public, and private interest, respect, and analysis may well be able to answer significant questions about the living patterns of the people who arranged those stones.

In this issue . . .

ty. Such information is the result of very careful measurement, recording, examination, testing, and analysis. Moreover, archaeologists often need to compare and contrast information gathered from many sites in order to identify confidently patterns about prehistoric life. All of us frequently assume we can be historians and evaluate historic sites. When confronted with prehistoric sites we stop short. The skills it takes to unravel that information are too imposing and we give the discipline of archaeology and the study of prehistoric materials some distance in our minds.

There is a significant difference in the proper management of historic and prehistoric sites. Many buildings survive best when they are in active, productive use. While change occurs to those buildings as a result of modern tenants, occupancy insures upkeep and interest that doesn't exist if buildings stand empty or if they house museums. Prehistoric sites cannot be preserved through use. In fact, even studying them, through excavation, testing, and analyzing materials, destroys some of their information value. Many archaeological sites need to be protected inviolate so that future archaeologists, with better methods of excavation and wider information base can examine things which puzzle us now.

Whatever the reasons for not integrating the discussion of prehistoric resources into this newsletter as often as we should, we need to do so. We need especially to do so to combat Montanans' underestimation of the value of our sites. Perhaps we've seen too many *National Geographic* pictures of Ohio burial mounds or Southwestern cliff dwellings. Maybe Montana's recent nomadic, boom and bust history makes us take for granted the manifestations of the early inhabitants who lived lightly on the land and moved often. Whatever the reason, we have so much to gain by learning as much as we can from the prehistoric sites and materials that are so frequently found on our landscape. Those early remains do not need to duplicate the remnants found in any other part of the country. They are intrinsically eloquent; they tell us how and why people live so long ago on a land that we value so much now.

Marcella Sherfy

From Stone Circles in the Montana Rockies, *a plan map that records one Pilgrim Site excavation. Dotted circles indicate the excavation boundaries. Various symbols used in plan maps exactly record finds of projectile points, other stone tools, bone tools, utilized bone, stone flakes, and more.*

Prehistoric artifacts—look but don't touch

Before you take home a projectile point, lithic materials, or other artifacts from a prehistoric site in Montana, please consider the implications and consequences of doing so.

As several articles in this issue discuss, archaeological sites are most important for the information they yield upon careful mapping and analysis. We value them not just for their association with prehistoric peoples. We want to use those sites systematically to learn more about what prehistoric people ate, how they lived, and where they traveled. For an archaeologist who works like a detective, every artifact in a site and its location are critical to building a comparative record of the kinds and uses of materials by prehistoric people. A projectile point on your coffee table will be a conversation piece, and a spark to interest in prehistory in the state. The same projectile point, in its original location, will tell an archaeologist the degree of tool-making skill that the people making it and using it had, the time when they lived, and how far they traveled or traded for their tool materials.

So, we would urge you, regardless of location within the state, to look for, enjoy, and study evidences of prehistoric life, but not to harm, destroy, or remove material from such sites. We encourage you to use photographs to record your finds. We also urge you to tell us about the sites you locate. Together, we can add them to the computerized list of Montana's cultural resources so that others will know about them and not inadvertently harm them.

On lands in state or federal ownership, our request is the basis for law. Both state and federal statutes prohibit the disturbance or collection of materials at historic or prehistoric sites, on penalty of stiff fines or imprisonment.

supplement to

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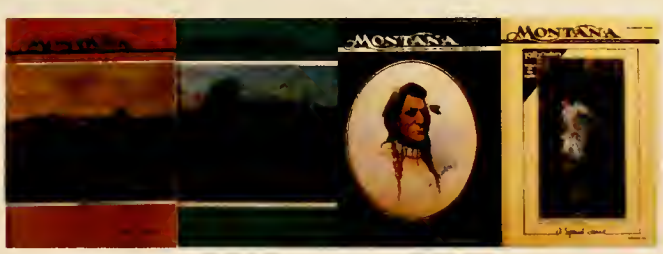

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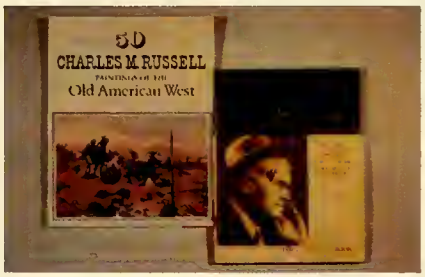

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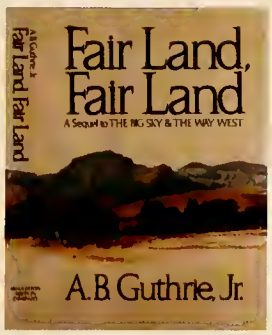

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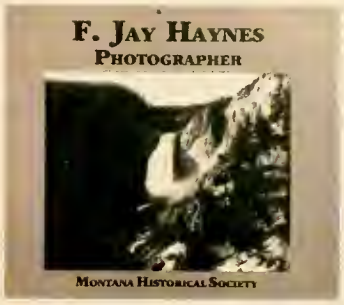

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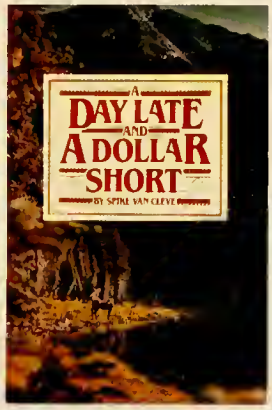

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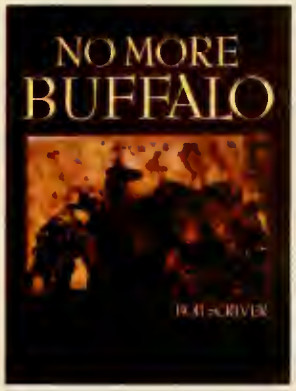

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Work progresses at two important Montana sites

The following two articles describe two different archaeological research efforts begun during the summer of 1982. One project results from federal historic preservation regulations affecting federal agencies and directing them to recover information from sites prior to its loss in federal construction work. The other article describes work undertaken by Montana State University as a part of its continuing research efforts. Both articles illustrate, though, commonalities in the techniques and purposes that govern extensive archaeological site research.

Sun River

The Omaha District of the United States Army Corps of Engineers is currently funding archaeological research, near Great Falls, on the Sun River Flood Control Project. In 1978, an archaeological survey of the general project area identified Site 24CA74, a campsite used repeatedly during the Middle and Late Prehistoric Periods, beginning around 2500 B.C. The site is situated within a proposed borrow source for fill material for levee construction along the Sun River's north bank.

The Corps' involvement in archaeological work results from several legislative mandates, which together exert a powerful influence over the way archaeological sites are treated in the federal government's environmental planning process. The Reservoir Salvage Act of 1960 was the first act to call for the salvaging of archaeological resources on a national scale. It prescribed methods for dealing with the destruction of archaeological sites resulting from construction of federal dams and reservoirs.

In 1974 the Archaeological and Historic Preservation Act, an amendment to the Reservoir Salvage Act, expanded the scope of the 1960 Act to provide for the preservation of historical and archaeological data under *all* federal and federally-assisted construction projects. No longer limited to just reservoirs and dams, the amended Salvage Act also applies to more commonplace federal projects and programs that might destroy significant scientific, prehistoric, historic or archaeological remains.

Budgeting and planning for federal projects now require provisions for sufficient time and funds to: survey adequately and identify any properties or remains, recover data in accordance with professional standards and fully analyze the data, and publish the findings of investigations. The 1966 National Historic Preservation Act further broadened federal agency responsibility for considering cultural resources, and provided a procedure defining the limit and nature of an agency's preservation, recording, or excavation measures.

As a result of that legislation the Corps of Engineers has adopted measures to insure that a thorough treatment of site 24CA74 will occur prior to the use of the area as a borrow source. The program has included an assessment of the deeply-buried deposits by test-excavating portions of the site. This allowed a clear definition of site boundaries and depth, the nature and condition of the cultural materials present, and an evaluation of the site's capacity to yield important information on the prehistory of the area. Site 24CA74 has been officially determined eligible for listing on the National Register of Historic Places for its significance to the prehistory of the Northern Rockies region. A research design for interpreting the archaeological evidence that exists at 24CA74 has been formulated, based on the findings of the earlier test explorations. Excavation work began in July by archaeologists from Historical Research Associates, Missoula, Montana, under contract with the Corps of Engineers.

At Sun River, as in other sites, archaeological excavation is a very labor-intensive process in which artifacts and features are meticulously recorded and samples of soils and datable organic materials are collected for laboratory analysis. By carefully examining the materials represented at the site, and their distribution, density and context, archaeologists get a picture of the spectrum of activities carried out by the aboriginal inhabitants and gain a better understanding of the role of past climatic conditions and the availability of certain key resources such as animal and plant foodstuffs. Soil and geomorphology studies are especially critical at 24CA74 in the interpretation of natural environmental factors that have affected the site deposits and overall state of preservation in this highly dynamic riverine setting. All materials recovered will be analyzed and properly stored for future comparative studies. A comprehensive report will be prepared that will serve to record and thereby permanently preserve the archaeological data.

Archaeological studies conducted in connection with the Sun River Project are on a relatively large scale of both the nature of the campsite and the major impact from borrow activities that the site would have sustained had the deposits been left in place. It is just one example of how the archaeological profession and government agencies integrate archaeologicial preservation into the environmental planning process.

Photo from Townsend Star

Montana State University students are seen as they conclude excavation of the 10,000-year-old occupation layer at the Indian Creek dig. Only hand tools were used in excavating down 13 feet below the Mazama ash level.

Indian Creek

In June and July 1982, a 10-person crew of Montana State University (MSU) students directed by Les Davis, Ph.D., anthropologist (Department of Sociology) excavated a deeply stratified, ancient archaeological site in the base of the Elkhorn Mountains west of Townsend, Montana.

Funded by the MSU Office of Research and Development, the Museum of the Rockies, and the National Park Service through the Montana State Historic Preservation Office, the Indian Creek project will add significantly to knowledge about the Early Prehistoric Period human occupation of the Montana Rockies.

Indian Creek

The 1982 work, on the property of Nila Tyrrel, concentrated on sampling the several occupations that occured at the site prior to a major volcanic ashfall, which drifted into the area from Mt. Mazama in Oregon about 6,700 years ago.

Excavation of a food processing and living floor three meters below the ash yielded the remains of five bison killed and used by early hunters 10,200 years ago. An even earlier occupation, radiocarbon-dated at 11,000 years ago, yielded the butchered and processed remains of still earlier bison, accompanied by stone tools and large amounts of flakes resulting from tool production and resharpening. These two Indian Creek site floors are currently the earliest documented human occupations in Montana.

Present evidence suggests the dominance of bison hunting as the primary food prey species for at least 4,300 years before the Mazama ashfall. Mountain sheep procurement just prior to the ashfall was documented at Indian Creek in 1979 when the site was discovered by MSU during a survey of cultural resources on a 24,000-acre tract in Limestone Hills, contracted by the Montana Army National Guard.

Intensive studies of procured plant remains, pollen, soils, and geology, as well as of the ultilized and natural animal remains and artifacts, will be conducted this fall and winter at Montana State. Michael Wilson, Ph.D., University of Calgary, will study the recovered animal remains; Robert Ottersberg, Bozeman, will analyze and interpret the soils; James C. Miller, Bozeman, will interpret the unique geological records; and Sally Greiser, Ph.D., Missoula will analyze and interpret the ultized rock types and the technological implications inherent in the recovered stone tools and the waste flakes.

Davis, as principal investigator and project director, will present preliminary significant findings to members of the Plains Anthropological Society at the annual conference to be held in Calgary this autumn.

Smithsonian system labels sites exactly

In the 1950s, the Smithsonian Institution developed a system for keeping track of archeological sites using a three part designation. Consider the number described in the Corps of Engineer's Sun River excavation project, 24CA74. 24 is a descriptive number for Montana, which is, alphabetically, the 24th state. CA is an abbreviation of Cascade County. 74 indicates that this Sun River site was the seventy-fourth historic or prehistoric site to be identified in Cascade County. While some archaeological sites are given names, (note, for instance, Les Davis's informal name for the tipi rings site in the Elkhorn foothills, the Pilgrim site), there are several reasons to rely mostly on the Smithsonian numbering system. Finding unique informal names for the many archaeological sites in Montana would be difficult, and the numbering system, with its use of state and county indicators, permits easy indexing and filing of site material.

How old are they? Radiocarbon dating gives us the answers

The Montana State Historic Preservation Office recently contracted with Professor Leslie B. Davis, Ph.D., of Montana State University for the compilation and publication of existing prehistoric and historic radiocarbon dates from Montana archaeological sites. His study, which summarizes 332 radiocarbon dates for 130 Montana archaeological sites, was recently published in Special Issue Number 3 for 1982 of *Archaeology in Montana* ("Montana Archaeology and Radiocarbon Chronology: 1962-1981") and will be an extremely useful tool for archaeologists seeking patterns in Montana's prehistoric settlement.

Radiocarbon dating is perhaps the best known and most widely used of all chronometric dating methods. Living organisms build up their own organic matter by the use of atmospheric carbon dioxide. As soon as an organism dies, no further carbon is incorporated and the radiocarbon present in the dead organism decays slowly, so that after 5,568 years, only half the original amount will be left, after about 11,000 years only a quarter, and so on. Radiocarbon dates thus can be computed from samples of a wide range of organic material.

Only a very small amount of charcoal, burnt bone, shell, hair, skin, wood, or other organic substance is needed for the laboratory. The samples themselves must be collected with meticulous care during excavation from stratigraphical contexts, so that an exact location and specific structure is dated. Every kind of datable material requires special preparation in the laboratory. The first stage in the dating procedure is a physical examination of the sample. All obvious contaminants (roots and so on) are removed mechanically and chemically. The material is then converted into gas, purified to remove radioactive impurities, and then piped into a machine that compares the radioactivity of the sample to a modern sample. The comparison is made at least twice at intervals of about a week, and the age of the sample computed, along with its statistical limit of error. A date from a radiocarbon dating laboratory bears a statistical plus or minus factor. For example, $3{,}621 \pm 180$ years means that the chances are two out of three that the correct date is between the span of 3,441 and 3,801 years ago.

Davis's study in *Archaeology in Montana,* mentioned above, can be obtained at no cost from the Montana State Historic Preservation Office, or from Jerry Clark, Secretary/Treasurer, Montana Archaeological Society, 117 North Jordan, Miles City 59301.

Apply now for 1983 federal grant funds

As has been the case for the last two years, we still do not know whether Montana will receive federal historic preservation grant funds from the Department of Interior for the new federal fiscal year beginning October 1, 1982. We won't know that until Congress approves a budget. Notwithstanding our uncertainty, if you are considering a preservation project in which federal funds would help, we urge you to write us, outline the project and its purposes, and identify how you would match any federal funds you are requesting. We will then be better prepared to allocate federal funds quickly if they are approved by Congress.

Last year, Congress limited the use of any federal preservation fund grants to non-construction projects. In other words, federal preservation grant dollars could be spent on architectural, historical, or archaeological surveys, on historic preservation master plans, on preparation of plans and specifications for building rehabilitation, and for preservation feasibility studies. They could not be spent on actual building rehabilitation. If federal funds are appropriated for preservation, we do not know whether the same restrictions will exist, but we think it likely. However, at this time, we encourage you to tell us about any preservation project in which grant funds would be of assistance.

16 state properties added to Register

The following properties have been listed in the National Register of Historic Places between March and July, 1982:

Cascade County
Robert Vaughn Homestead/Captain Couch Ranch, near Vaughn. June.

Deer Lodge County
Washoe Theater, Anaconda. April.

Fergus County
St. Leo's Catholic Church, Lewistown. May.

Gallatin County
Little Bear School (addendum to One Room Schoolhouses of Gallatin County). April.
Ruby Theater, Three Forks. April.

Glacier County
Holy Family Mission, near Heart Butte. June.

Lake County
Fort Connah Site, near Ronan. April.

Lewis and Clark County
Morris Silverman House, Helena. June.

Missoula County
Carnegie Public Library, Missoula. April.
Milwaukee Depot, Missoula. April.
St. Francis Xavier Church, Missoula. April.

Powell County
Trask Hall, Deer Lodge. April.
American Women's League Chapter House, Deer Lodge. June.

Richland County
People's Congregational Church, Sidney. April.

Valley County
Frank Sargent House, Nashua. July.

Yellowstone County
Prescott Commons, Billings. April.